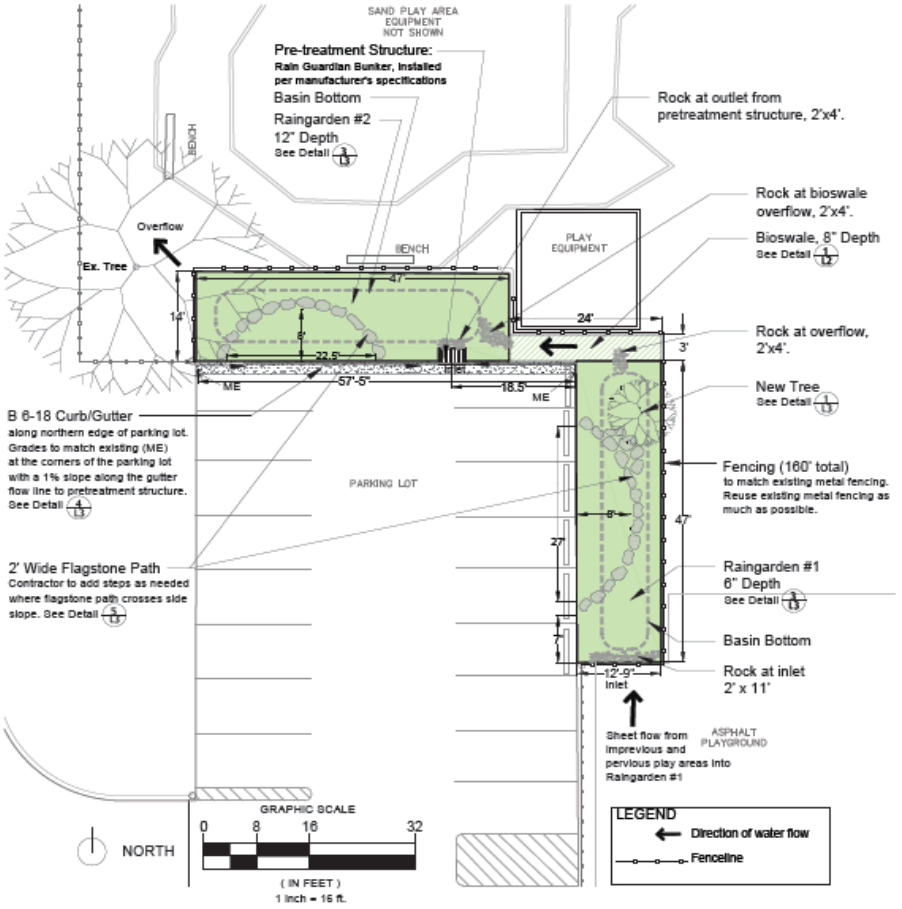
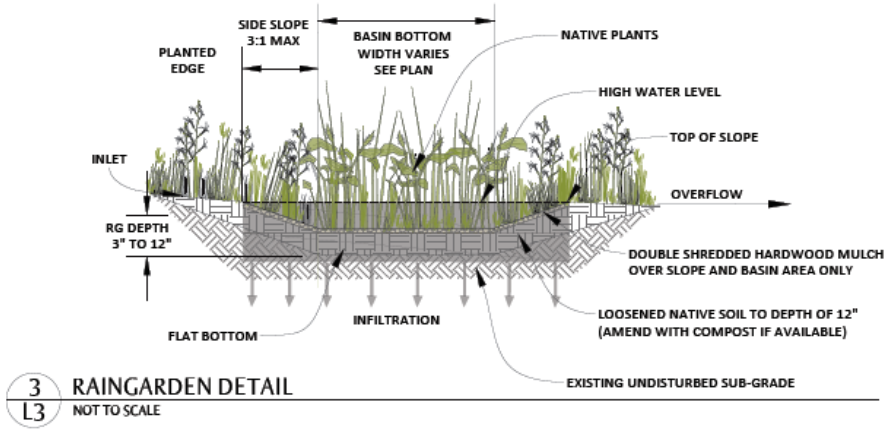
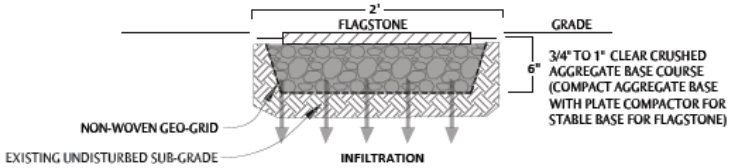
Minneapolis Public Schools - Best Management Practice Maintenance and Inspection Specifications

Field School Rain Garden/Bioretention: 4645 4th Ave S, Minneapolis MN 55419





3 L3 RAINGARDEN DETAIL
NOT TO SCALE



5 L3 FLAGSTONE PATH DETAIL
NOT TO SCALE

BMP ID:	Location: North of parking lot	Inspection Frequency: Fall, Spring and following rain events greater than 2”

Description of Devices: Rainwater runoff sheet flows into 6” deep, vegetated Raingarden #1 from impervious areas south of the raingarden. Rainwater runoff from the parking lot flows north into a pre-treatment structure and then into 12” deep, vegetated Raingarden #2. These raingardens allow the rainwater runoff to be absorbed into the ground. In large rain events the water in Raingarden #1 will overflow into Raingarden #2 and Raingarden #2 will overflow at a rock outlet at its northeast corner.

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Routine Maintenance

- Check for trash debris or areas of erosion and bare soil
- *Weeding* – Remove weeds routinely. If very dry conditions have existed it's helpful to water the area which will loosen the root system
- Keep open areas covered with sufficient mulch, shrubs or other vegetation
- Keep flagstone path clear of mulch and plant material. Tie back plant material if necessary to keep path accessible. Relay Flagstone path as necessary.

Notes: Return reports annually to Minneapolis Public Works SWS stormwater@minneapolismn.gov

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BMP ID:		**Rain Garden/Bioretention**		
Inspection Date / / 20		**Inspector:**		
Inspection Activity	**Observations Measurements**	**Maintenance**	**Maint. Required**	**Actions Required/Date Completed/Responsible Foreman**
General: Inspect contributing areas for dirt, trash, leaves etc. **Basin & Bioswale** Check for sediment build up, erosion or bare spots.		Contributing areas Sweep remove litter/debris. Seed, mulch or sod any bare or eroded areas contributing to the BMP Basin & Bioswale 1. Remove accumulated sediment and debris. 2. Seed, blanket and stabilize any bare or denuded areas.	Yes No Yes No Yes No	/ / 20 Responsible Party:
Rock Inlets and Outlets Inspect rock at areas where runoff enters and exists the raingarden for debris or trash **Pre-Treatment Structure** Check for sediment build up in the pre-treatment sump. Remove and replace grate as needed to remove sediment.		Remove debris or vegetation (weeds) from between rocks where runoff enters and exits the raingarden. Remove rock, rinse and replace if needed. Inspect condition of grate, and integrity of structure and surrounding curbing. (see Rain Guardian Maintenance Guide)	Yes No Yes No	/ / 20 Responsible Party: / / 20 Responsible Party:
Vegetation/Mulch Visual inspection of side slopes, basin bottom and all landscaping adjacent to or contributing to the basin		Remove and replace dead plants; remove invasive plants, weeds and woody vegetation, prevent soil loss by protecting bare soils after weeding. Mulch depth should be 2”thick. Add whenever mulch levels are less than 2” using only a double shredded hardwood	Yes No	/ / 20 Responsible Party:
Dewatering Visual inspection for any standing water present in the basins or forebays		Notify maintenance contractor of need for service if there is standing water at the surface 48 hours after a storm event.	Yes No	/ / 20 Responsible Party:

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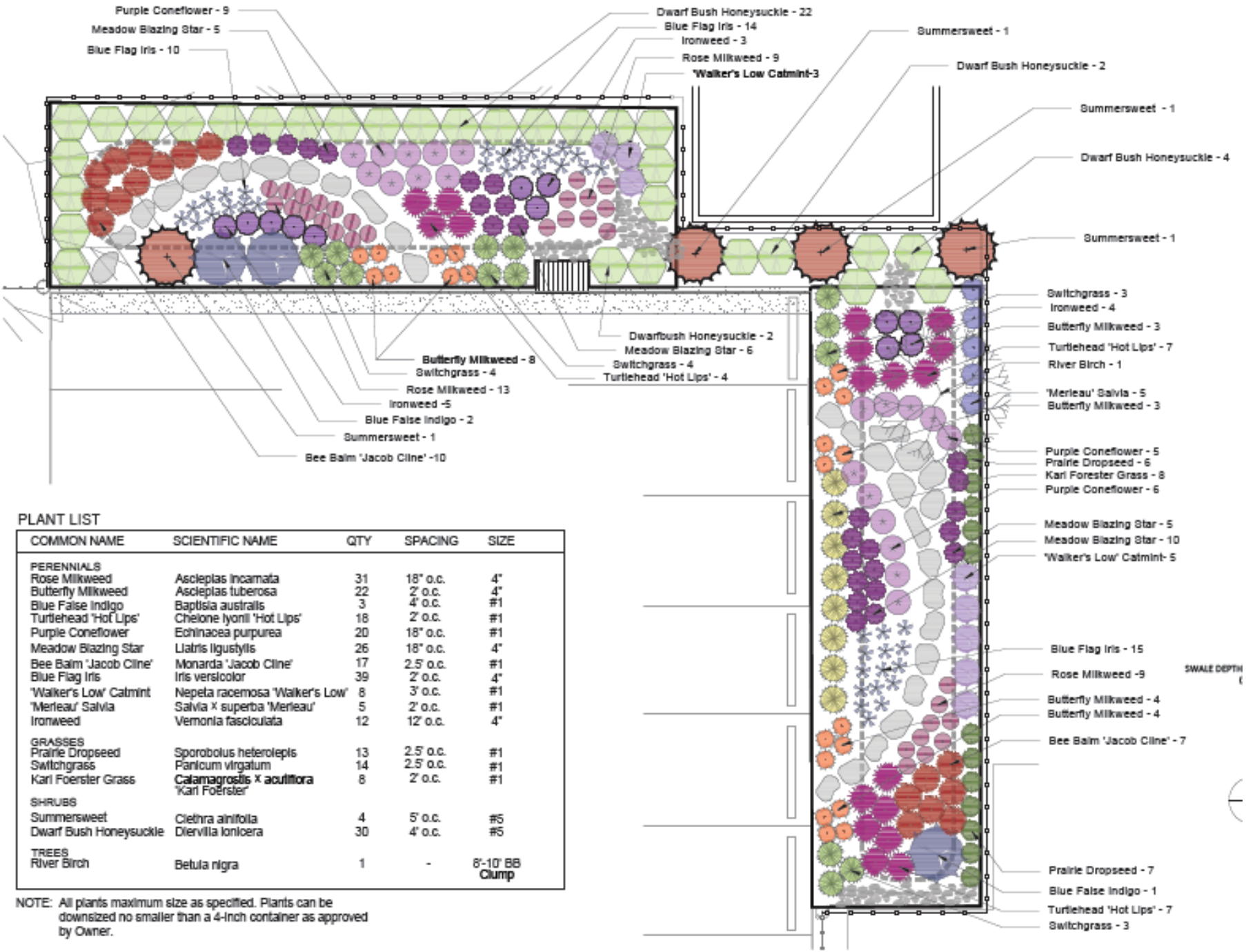

PLANT LIST

COMMON NAME	SCIENTIFIC NAME	QTY	SPACING	SIZE
PERENNIALS				
Rose Milkweed	Asclepias incarnata	31	18" o.c.	4"
Butterfly Milkweed	Asclepias tuberosa	22	2' o.c.	4"
Blue False Indigo	Baptisia australis	3	4' o.c.	#1
Turtlehead 'Hot Lips'	Chelone lyonii 'Hot Lips'	18	2' o.c.	#1
Purple Coneflower	Echinacea purpurea	20	18" o.c.	#1
Meadow Blazing Star	Liatris ligustylis	26	18" o.c.	4"
Bee Balm 'Jacob Cline'	Monarda 'Jacob Cline'	17	2.5' o.c.	#1
Blue Flag Iris	Iris versicolor	39	2' o.c.	4"
'Walker's Low' Catmint	Nepeta racemosa 'Walker's Low'	8	3' o.c.	#1
'Merleau' Salvia	Salvia x superba 'Merleau'	5	2' o.c.	#1
Ironweed	Vernonia fasciculata	12	12' o.c.	4"
GRASSES				
Prairie Dropseed	Sporobolus heterolepis	13	2.5' o.c.	#1
Switchgrass	Panicum virgatum	14	2.5' o.c.	#1
Karl Foerster Grass	Calamagrostis x acutiflora 'Karl Foerster'	8	2' o.c.	#1
SHRUBS				
Summersweet	Clethra alnifolia	4	5' o.c.	#5
Dwarf Bush Honeysuckle	Diervilla lonicera	30	4' o.c.	#5
TREES				
River Birch	Betula nigra	1	-	8'-10' BB Clump

NOTE: All plants maximum size as specified. Plants can be downsized no smaller than a 4-inch container as approved by Owner.

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RAIN GUARDIAN

U.S. PATENT NOS. 8,501,010 AND 8,858,804

PRETREATMENT FOR BIORETENTION

Rain Gardens • Swales • Filtration Basins • Infiltration Basins

COMMERCIAL/INDUSTRIAL

RESIDENTIAL

Maintenance Guide

Rain Guardian pretreatment chambers simplify bioretention maintenance by collecting sand, leaves, grass clippings, and other debris in an easy to clean, confined location. Regularly maintaining the Rain Guardian sustains its functionality by maximizing storage and filtration capacities. Maintenance frequency is variable and depends on many factors such as rainfall frequency, drainage area size and land use type, and season of the year. The general cleaning process is identical for the Rain Guardian Turret and Rain Guardian Bunker.

Following rain events, inspect the pretreatment chamber for debris on the top grate, within the chamber, and on the vertical, drop-in filter wall. The maintenance steps described below should be completed if areas of the top grate are clogged, the chamber is >75% full, or the vertical filter wall is clogged. Maintenance should be completed when stormwater has completely drained from the bioretention practice. The filter wall allows the chamber to dry between rain events, which further simplifies maintenance by ensuring removed debris is largely dry. Ensure all debris collected during cleaning of the chamber is completely removed from the site and properly disposed of according to local environmental rules. Once cleaning is complete, reinstall the filter wall with filter fabric facing the inside of the chamber and replace the top grate.

Clear Debris from Top Grate

- Leaf litter and garbage commonly accumulate on the top grate
- Simply remove and dispose of debris by hand or with a shovel prior to removing top grate

Remove Debris from Inside Chamber

- Remove top grate and place on paved inlet to avoid damage to nearby plants
- Remove and dispose of accumulated debris within chamber using a shovel

Clean Filter Wall

- Remove drop-in filter by lifting vertically
- Clean filter wall with a stiff bristled broom or rinse clean with pressurized water

www.RainGuardian.biz

ANOKA CONSERVATION DISTRICT

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Ham Lake, MN 55304
(763) 434-2030 (M-F 8:00-4:30)